May 14, 2018

Ex Parte

Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street SW
Washington, DC 20554

Re: *Use of Spectrum Bands Above 24 GHz for Mobile Radio Services, et al., GN Docket No. 14–177, IB Docket No. 15–256, RM–11664, WT Docket No. 10–112, IB Docket No. 97–95*

Dear Ms. Dortch:

Ericsson lauds the Commission's efforts to increase the viability of 5G terrestrial deployments by publishing the Spectrum Frontiers Second Report and Order.[1]

In support of a rapid launch of 5G services, Ericsson has invested heavily in product development efforts in line with the FCC's initial Report and Order,[2] which identified licensed spectrum in the 28, 37 and 39 GHz spectrum bands as the initial 5G bands. This investment was to secure 5G commercial launches in the 2018 timeframe.

However, while the recent announcement of the 24 & 28 GHz auction has created momentum in 28 GHz deployments, it has created uncertainty elsewhere: 24 GHz investments are now prioritized over investments in the 37-40 GHz bands, although 24 GHz has not yet been developed for 5G.

Another concern is with the 37 and 39 GHz bands. An auction has not been announced. Meanwhile, products developed for these frequency bands must adapt to the existing band rules that are not very suitable for some 5G use cases or deployment scenarios. Ericsson and other industry members must develop an interim ecosystem instead of the envisioned bandplan with 200 MHz channels.

One of the challenges with 39 GHz spectrum is that it is highly fragmented. This means that in many cases, operators have non-contiguous of 50 MHz block holdings spread across the entire 1.4 GHz band[3].

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1 *See Use of Spectrum Bands Above 24 GHz For Mobile Radio Services*, et. al., Second Report and Order, et al., 32 FCC Rcd 10988 (2017).

2 *See Use of Spectrum Bands Above 24 GHz For Mobile Radio Services*, et. al., Report and Order and Further Notice of Proposed Rulemaking, 31 FCC Rcd 8014 (2016).

3 *See* Letter from Mark Racek, Jared Carlson, and Sanjay Dhawan, Ericsson, to Marlene Dortch, Federal Communications Commission, *Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz*, GN Docket No. 17-183 (filed Mar. 29, 2018). In this situation, the overall peak experience will be sub 1 GHz and the median user throughput may be comparable with LTE.

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This fragmentation creates combinations that vary from market to market, and from licensee to licensee. The challenges are many:

- The existing block sizes may be 50 MHz, 100 MHz, 150 or 200 MHz and will in most cases be non-contiguous across the entire 1.4 GHz band.
- New product development is necessary to support the noncontiguous nature of the band with its multiples of 50 MHz blocks.
- Applicant-defined rectangular areas impose additional challenges.
- Carrier aggregation is necessary to support some 5G use cases. However, it will not be possible to use carrier aggregation to aggregate all blocks in some cases.
- Carrier aggregation can impose requirements on the type of equipment, which may not be suitable for residential markets.
- There are many permutations of spectrum blocks spanning market and operator scenarios that need to be supported.
- Each of these permutations needs to be verified between the Network and Device vendors.

To avoid the extensive interim solution variants and to maintain the goal of U.S. 5G leadership, Ericsson urges the Commission to act quickly to support an industry-led repacking agreement and thereby paving the way for an auction in 2019 timeframe. Such a decision would benefit existing product developments and provide regulatory certainty for incumbents and vendors.

Respectfully submitted,

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